Senior Analyst

Sr. No.	Question Body and Alternatives
1	Which type of food business falls under the purview of the Central Licensing Authority according to Regulation 2.1.2(3) and Schedule 1 of Food Safety and Standards (Licensing and Registration of Food Businesses), Regulations 2011? (A) Petty food manufacturers-(Correct Alternative) (B) Restaurants serving food (C) All Importers importing food items for commercial use (D) Manufacturer with production capacity below 1 MT per day
2	For refined vegetable oil obtained by the method of solvent extraction and imported into India, what is the maximum permissible limit for Hexane according to FSSAI regulation? (A) Not more than 1.00 ppm.-(Correct Alternative) (B) Not more than 2.50 ppm. (C) Not more than 5.00 ppm. (D) Not more than 10.00 ppm.
3	According to the Class II preservatives given by FSSAI, what is the maximum limit for Sulphur dioxide when used in dry mix of Rasogollas? (A) 600 ppm.-(Correct Alternative) (B) 1500 ppm. (C) 100 ppm. (D) 2000 ppm.
4	According to the Food Safety and Standards (Alcoholic Beverages) Regulations, 2018, what is the minimum percentage of alcohol by volume (abv) for a beverage to be defined as an" alcoholic beverage"? (A) More than 0.0 per cent abv-(Correct Alternative) (B) More than 0.5 per cent abv (C) More than 5.0 per cent abv (D) At least 1.0 per cent abv
5	Which of the following substances is explicitly listed as prohibited in alcoholic beverages as per Food Safety and Standards (Alcoholic Beverages) Regulations, 2018? (A) Ethyl alcohol-(Correct Alternative)

(B) Naturally-occurring caffeine

(C) Caramel (as colouring matter in Rum)

(D) Psychotropic substances

6 According to the provisions for Fortified Processed Foods, which category of food shall be excluded from the Fortified Processed Foods category?

(A) Low-fat dairy products-(Correct Alternative)

(B) Fruits and vegetables

(C) Whole grain cereals

(D) High Fat Sugar Salt (HFSS) Foods

7 What is a general requirement for articles of food sold in capsule format, according to the Food Safety and Standards (Health Supplements, Nutraceuticals Food for Special Dietary Use, Food for Special Medical Purpose, Functional Food and Novel Food) Regulations, 2016?

(A) They must be made of vegetarian material only-(Correct Alternative)

(B) They must be approved by a medical professional

(C) They shall comply with the general monograph and quality requirements specified for them in Indian Pharmacopoeia, if applicable

(D) They must contain a minimum of one gram of active ingredient

8 After test or analysis, in which Form shall the certificate from the Director of the Referral Food Laboratory be supplied to the sender?

(A) Form A-(Correct Alternative)

(B) Form B

(C) Form C

(D) Either Form A or Form B

9 After test or analysis, in which Form shall the report signed by the Food Analyst be supplied to the sender?

(A) Form A-(Correct Alternative)

(B) Form B

(C) Form C

(D) Either Form A or Form B

10 As per FSSAI, what is the requirement for *Salmonella* sp. in Pasteurized/boiled milk/Flavored Milk?

(A) Absent/g-(Correct Alternative)

(B) < 10/ml

(C) Absent/25 ml

(D) Absent/25g

11 What does the ISO/IEC 17025 document specify?

(A) Requirements for quality management systems-(Correct Alternative)

(B) Guidelines for auditing management systems

(C) General requirements for the competence, impartiality, and consistent operation of laboratories

(D) Requirements for bodies certifying products, processes, and services

12 What is the definition of "validation" as per ISO/IEC 17025?

(A) Calibration of equipment to ensure accuracy-(Correct Alternative)

(B) Reviewing technical records for correctness

(C) Verification, where the specified requirements are adequate for an intended use

(D) Comparison of results with other laboratories

13 According to the structural requirements, what must the laboratory be?

(A) A registered business-(Correct Alternative)

(B) An accredited body

(C) A legal entity, or a defined part of a legal entity, that is legally responsible for its laboratory activities

(D) An international organization

14 Which of the following is required to be retained as a record of method validation?

(A) Only the validation procedure used-(Correct Alternative)

(B) Only the results obtained

(C) Only a statement on the validity of the method

(D) The validation procedure used, specification of the requirements, determination of the performance characteristics, results obtained, and a statement on the validity of the method

15 What minimum air change rate is recommended for a chemical storage room?

(A) 5 air changes/hour-(Correct Alternative)

(B) 10 air changes/hour

(C) 15 air changes/hour

(D) 20 air changes/hour

16 _____ is a process of heat transfer in which heat flows from a hotter body to cold body in the form of electromagnetic waves

(A) Conduction-(Correct Alternative)

(B) Convection

(C) Radiation

(D) Irradiation

17 A fan delivers air at a flow rate of 15m^3/s against static pressure of 150 mm water gauge. Determine the static efficiency of the fan. The power required to operate the fan is 30 kw

(A) 10.25%-(Correct Alternative)

(B) 56.75%

(C) 61.25%

(D) 73.53%

18 The rotary screen cleaner has normally

(A) Square decks-(Correct Alternative)

(B) Rectangular decks

(C) Circular decks

(D) Oval decks

19 Thermal conductivity of single grain is

(A) 0.3-0.6 kcal/m-h-^oC-(Correct Alternative)

(B) 0.3-0.6 kcal/m^2-h-^oC

(C) 0.1-0.15 kcal/m-h-^oC

(D) 0.1-0.15 kcal/m^2-h-^oC

20 Thermal diffusivity is directly proportional to

(A) Thermal conductivity-(Correct Alternative)

(B) Specific heat

(C) Mass density

(D) Heat transfer coefficient

21 In a cross flow dryers the flow of grain and drying air takes place at

(A) Parallel to each other-(Correct Alternative)

(B) Opposite to each other

(C) 90^{o}

(D) 45^{o}

22 The wave length of the electromagnetic radiation in the radiation drying is lies between

(A) 10-50 µm-(Correct Alternative)

(B) 0.01-0.50 µm

(C) 0.76-400 µm

(D) 100-1000 µm

23 A plate fin type heat exchanger has motion of two fluids in ———— type arrangement

(A) Parallel flow-(Correct Alternative)

(B) Counter flow

(C) Cross flow

(D) None of the above

24 UV -C radiation for microbial destruction

(A) 200-315 nm-(Correct Alternative)

(B) 248-280 nm

(C) 300-500 nm

(D) 256-400 nm

25 The centrifuge used in cream separation

(A) Tubular centrifuge-(Correct Alternative)

(B) Disk bowl centrifuge

(C) Spitzkasten classifier

(D) Cyclone separator

26 Boiling-point elevation in evaporators can be estimated using ———— that the ratio of the temperatures at which two solutions exert the same pressur is constant.

(A) Duhring's rule-(Correct Alternative)

(B) Charles rule

(C) Avogadro rule

(D) Waves rule

27 Plate heat exchanger mainly used in

(A) Oil Industry-(Correct Alternative)

(B) Meat Industry

(C) Dairy industry

(D) Thermal Industry

28 In paper manufacturing the whitness of the pulp is normally measured and compared with

(A) Magnesium oxide-(Correct Alternative)

(B) Calcium oxide

(C) Sodium oxide

(D) Calcium bisulfite

29 Determination of thermal shock resistance of glass containers

(A) ASTM C149-(Correct Alternative)

(B) ASTM D638

(C) ASTM D5338

(D) ASTMA370

30 The general glass used for making containers for food packaging is

(A) Soda lime glass-(Correct Alternative)

(B) Borosilicate glass

(C) Treated soda lime glass

(D) None of the above

31 The science deals with flow and deformation of fluid is

(A) Rheology-(Correct Alternative)

(B) Physiology

(C) Entomology

(D) Pathology

32 The steam economy for the multiple effect evaporator is always

(A) Less than 1-(Correct Alternative)

(B) Greater than 1

(C) Equal

(D) None of the above

33 Blanching is done to

(A) Inactivate Enzymes-(Correct Alternative)

(B) Destroy peroxides

(C) Both (A) and (B)

(D) Improve nutrients

34 The solvent used in rice bran oil extraction is usually

(A) Water-(Correct Alternative)

(B) n-hexane

(C) Ethanol

(D) Acetone

35 Example of humidity absorbers in active packaging

(A) Ascorbic acid-(Correct Alternative)

(B) Propylene glycol

(C) Activated carbon

(D) Potassium permanganate

36 Which of the following is an example of an invisible fat?

(A) Milk-(Correct Alternative)

(B) Butter

(C) Vanaspati

(D) Margarine

37 Which natural antioxidant is used for preserving food fats?

(A) NDGA-(Correct Alternative)

(B) TBHQ

(C) BHA

(D) BHT

38 Excessive consumption of phosphoric acid in cola drinks may lead to

(A) Weight gain-(Correct Alternative)

(B) Reduced bone mineral density

(C) Increased calcium absorption

(D) Improved digestion

39 What is the characteristic symptom of rickets?

(A) Bleeding gums-(Correct Alternative)

(B) Numbness in hands and feet

(C) Bowed legs and bone deformities

(D) Hair loss

40 Which of the following organic compounds function as the primary building blocks of proteins?

(A) Monosaccharides-(Correct Alternative)

(B) Nucleotides

(C) Amino acids

(D) Fatty acids

41 Which of the following is a typical symptom of marasmus?

(A) Muscle wasting-(Correct Alternative)

(B) Odema

(C) Moon face

(D) Bowed legs

42 Which antiviral substance is naturally produced in the human body?

(A) Interferons-(Correct Alternative)

(B) Penicillins

(C) Beta-carotene

(D) Azoles

43 What type of glycosidic linkages does amylopectin contain?

(A) β-1,4 and β-1,6-(Correct Alternative)

(B) α-1,4 and α-1,6

(C) Only β-1,4

(D) Only α-1,4

44 Which amino acid is commonly found in both keratin (in hair) and insulin?

(A) Glycine-(Correct Alternative)

(B) Tyrosine

(C) Cysteine

(D) Glutamic acid

45 Amylopectin is a polymer of

(A) Ribose-(Correct Alternative)

(B) Galactose

(C) Fructose

(D) Glucose

46 Which type of lipid is primarily deposited in animal tissues and some plant organs?

(A) Waxes-(Correct Alternative)

(B) Sterols

(C) Triacylglycerols (triglycerides)

(D) Phospholipids

47 How does the cis double bond affect the shape of fatty acids like oleic acid?

(A) It straightens the chain-(Correct Alternative)

(B) It causes a bend of about 40°

(C) It shortens the chain

(D) It causes the chain to become rigid

48 In the oxidation of linoleic acid esters in monolayers, which compounds are considered primary intermediates?

(A) Hydrogen peroxide-(Correct Alternative)

(B) Ketones

(C) Peroxides and aldehydes

(D) Cis and trans epoxy compounds

49 Which enzymes are involved in the oxidation of polyunsaturated fatty acids after lipolysis?

(A) Amylase and protease-(Correct Alternative)

(B) Peroxidase and catalase

(C) Lipase and phospholipase

(D) Lipoxygenase and cyclo-oxygenase

50 Which of the following is the active form of Vitamin A involved in vision?

(A) Retinoic acid-(Correct Alternative)

(B) Retinol

(C) Retinal

(D) β-Carotene

51 Folic acid plays a major role in

(A) Vision-(Correct Alternative)

(B) Blood coagulation

(C) DNA synthesis and cell division

(D) Calcium metabolism

52 The antimicrobial effectiveness of sorbic acid in food products is most significantly influenced by which factor?

(A) Light exposure-(Correct Alternative)

(B) Water activity

(C) Presence of natural colorants

(D) pH of the food matrix

53 What is the main antinutritional effect of oxalates?

(A) Decrease calcium bioavailability by forming calcium oxalate-(Correct Alternative)

(B) Inhibit vitamin C absorption

(C) Destroy digestive enzymes

(D) Bind to dietary fats

54 Which is NOT an effect of gamma irradiation on food?

(A) Sterilization-(Correct Alternative)

(B) Protein denaturation

(C) Formation of melanoidins

(D) Lipid oxidation

55 Which compound is used as an indicator of irradiated lipids in food?

(A) Acrolein-(Correct Alternative)

(B) 2-Dodecylcyclobutanone

(C) Ethylene oxide

(D) Benzopyrene

56 Two sugars that are mirror image of each other are called

(A) Anomers-(Correct Alternative)

(B) Epimers

(C) Enantiomers

(D) Disastereomers

57 What is the initial product formed when a reducing sugar reacts with an amino group in the Maillard reaction?

(A) Alditol-(Correct Alternative)

(B) Schiff base

(C) Amadori compound

(D) Ketose

58 What is the significance of the hysteresis loop in sorption isotherms?

(A) It suggests that water molecules form permanent structures-(Correct Alternative)

(B) It proves that water activity is independent of water content

(C) It shows that water content remains constant during drying

(D) It indicates differences between adsorption and desorption processes

59 How does proton mobility in ice compare to that in water?

(A) It is lower in ice-(Correct Alternative)

(B) Proton mobility does not occur in ice

(C) It is the same in ice and water

(D) It is higher in ice by a factor of 100

60 According to the Watson and Crick model of DNA, each pitch of the helix consists of _____ pairs of nucleotides

(A) 8-(Correct Alternative)

(B) 9

(C) 12

(D) 10

61 The term “nutraceuticals” was coined by

(A) Linus Pauling-(Correct Alternative)

(B) Jennifer Doudna

(C) Stephen L. DeFelice

(D) Elizabeth Blackburn

62 According to the International Food Information Council (IFIC), _____ are “foods or dietary components that may provide a health benefit beyond basic nutrition.”

(A) Dietary Supplements-(Correct Alternative)

(B) Functional foods

(C) Pharmaceuticals

(D) Special Foods

63 Which of the following is not an example of nutraceutical compound grouped by plant sources?

(A) Glutathione-(Correct Alternative)

(B) MUFA

(C) DHA

(D) Ascorbic acid

64 The sequence of amino acids in a polypeptide chain represents which level of protein structure?

(A) Primary structure-(Correct Alternative)

(B) Secondary structure

(C) Tertiary structure

(D) Quaternary structure

65 Which of the following is a mycotoxin commonly found in cereals and grains?

(A) Cyclopiazonic acid-(Correct Alternative)

(B) Aflatoxin

(C) Patulin

(D) Sterigmatocystin

66 Organisms that grow over a broad spectrum of pH are

(A) Thermophilic anaerobes-(Correct Alternative)

(B) Yeasts

(C) Bacteria

(D) Molds

67 The widely used application of asepsis is in

(A) Radiation-(Correct Alternative)

(B) Packaging

(C) Decontamination

(D) Clean Handling

68 Spinach is an example of

(A) Low-acid food-(Correct Alternative)

(B) Medium-acid food

(C) High-acid food

(D) Acid food

69 Bacteria can grow on raw meat, in temperatures as low as

(A) 15 ^{o}C-(Correct Alternative)

(B) 5 ^{o}C

(C) -5 ^{o}C

(D) -15 ^{o}C

70 Citrus fruits are commonly infested with

(A) *Alternaria* rot-(Correct Alternative)

(B) Blue mold rot

(C) Stem-end rot

(D) All the above

71 Fresh and refrigerated meat are contaminated with

(A) *Cladosporium*-(Correct Alternative)

(B) *Rhizopus*

(C) *Debaryomyces*

(D) *Trichosporon*

72 Chocolate-brown discoloration in fish is caused by

(A) *Bacillus*-(Correct Alternative)

(B) *Proteus*

(C) *Serratia*

(D) Asporogenous yeast

73 Vacuum-packed chicken contains spoilage organisms such as

(A) *Enterobacter*-(Correct Alternative)

(B) *Pseudomonas*

(C) *Bacillus*

(D) *Clostridium*

74 Barny flavour in milk cream is produced by

(A) *Actinomycetes*-(Correct Alternative)

(B) *Enterobacter*

(C) *Streptococcus lactis*

(D) *Lactobacilli*

75 Sweet curdling occurs at an early stage of

(A) Proteolysis-(Correct Alternative)

(B) Souring

(C) Lipolysis

(D) Curdling

76 Distiller's yeast is a high-alcohol yielding strain of

(A) *Candida albicans*-(Correct Alternative)

(B) *Torula niveria*

(C) *Sacchromyces cerivisiae*

(D) *Torulopsis campestrum*

77 Gastroenteritis is caused by

(A) *Y. enterocolitica*-(Correct Alternative)

(B) *L. enterocolitica*

(C) *Y. appendicitis*

(D) *Y. pestis*

78 *Listeria monocytogenes* can be isolated from

(A) Milk-(Correct Alternative)

(B) Soil

(C) Sewage

(D) Both (A) and (C)

79 *Corynebacterium* is detected by the analysis of

(A) Throat swab-(Correct Alternative)

(B) Urine sample

(C) Blood sample

(D) Skin lesions

80 Which one of the following statement is true?

(A) Proline is synthesized by some gram-negative bacteria, while it is transported by gram positive bacteria-(Correct Alternative)

(B) Proline is synthesized by some gram-positive bacteria, while it is transported by gram negative bacteria

(C) Glycine is synthesized by some gram-negative bacteria, while it is transported by gram positive bacteria

(D) Glycine is synthesized by some gram-positive bacteria, while it is transported by gram negative bacteria

81 A statement relating to the frequency or maximum concentration of a microbiological hazard in a food considered acceptable for consumer protection is known as

(A) Food Safety Objective-(Correct Alternative)

(B) Food Standards Objective

(C) Food Quality Objective

(D) Food Hazard Objective

82 Plate count technique is used to quantify bacterial population of

(A) > 250 CFU/ml for liquids-(Correct Alternative)

(B) > 2500 CFU/ml for solids diluted to 1:10 ratio a liquid to be pipettable

(C) Both (A) and (B)

(D) None of the above

83 The organisms that are used to access either microbiological quality and safety are known as

(A) Spoilage organisms-(Correct Alternative)

(B) Indicator organisms

(C) Both (A) and (B)

(D) None of the above

84 Microorganisms with low iron requirement are not inhibited by

(A) Isothiocyanides-(Correct Alternative)

(B) Lactoferrin

(C) Lactalbumin

(D) Lysozyme

85 The building block(s) of HACCP program are

(A) Good Manufacturing Practices (GMP's)-(Correct Alternative)

(B) Sanitation

(C) Both (A) and (B)

(D) None of the above

86 What does "ash" refer to in food analysis?

(A) The total organic matter in a foodstuff-(Correct Alternative)

(B) The inorganic residue remaining after ignition or complete oxidation of organic matter

(C) The unburnt carbon content

(D) The water-soluble components of a food

87 The Mojonnier method is primarily applied to which type of food, although it is also applicable to others like flour and pet food?

(A) Cereal products-(Correct Alternative)

(B) Dairy foods

(C) Meat products

(D) Fruit juices

88 How can the presence of starch be tested for?

(A) By measuring its pH-(Correct Alternative)

(B) By heating the sample to a high temperature

(C) By adding a solution of iodine and potassium iodide and observing a color change to blue or brownish-red

(D) By analyzing its fat content

89 Which of the following methods is used to assay Vitamin C?

(A) HPLC-(Correct Alternative)

(B) Fluorometric method

(C) 2,6-dichloroindophenol titrimetric method

(D) Mass spectrometry

90 What is an advantage of using an Ion Selective Electrode (ISE) to monitor sodium content in foods compared to Mohr/Volhard titration?

(A) It is always more accurate-(Correct Alternative)

(B) It does not require any sample preparation

(C) It is faster and requires less reagent intensive

(D) It measures total organic elements

91 Methods for characterizing edible lipids, fats, and oils can be separated into two main categories. What are they?

(A) Organic and inorganic methods-(Correct Alternative)

(B) Saturated and unsaturated methods

(C) Those developed to analyze bulk oils and fats, and those focusing on analysis of foodstuffs and their lipid extracts

(D) Physical and chemical methods

92 What is the fundamental principle of Enzyme-Linked Immunosorbent Assay (ELISA) regarding the final color intensity?

(A) It is inversely related to the amount of target molecules-(Correct Alternative)

(B) The color intensity is positively related to the amount of the target molecules

(C) Color intensity is always the same regardless of target molecules

(D) The color intensity is unrelated to the target molecules

93 Which of the following are commonly encountered spectroscopic methods in traditional food analysis laboratories?

(A) X-ray diffraction, electron microscopy, and calorimetry-(Correct Alternative)

(B) UV, Visible, IR absorption spectroscopy, molecular fluorescence spectroscopy, and NMR spectroscopy

(C) Gas chromatography, liquid chromatography, and mass spectrometry

(D) Titratable acidity, pH measurement, and fat extraction

94 What is the source of radiation in Atomic Emission Spectroscopy (AES), in contrast to Atomic Absorption Spectroscopy (AAS)?

(A) An external light source like a hollow cathode lamp-(Correct Alternative)

(B) Excited atoms or ions in the sample itself

(C) Reflected light from the sample surface

(D) A UV lamp generating electromagnetic radiation

95 In Gas Chromatography (GC), what are the mobile and stationary phases, respectively?

(A) Liquid mobile phase and liquid stationary phase-(Correct Alternative)

(B) Solid mobile phase and gas stationary phase

(C) Gas mobile phase and either an immobilized liquid or a solid stationary phase

(D) Supercritical fluid mobile phase and solid stationary phase

96 The glass transition temperature (Tg) of an amorphous food material is a critical property often determined by thermal analysis. What does Tg primarily signify?

(A) The temperature at which the material begins to boil-(Correct Alternative)

(B) The temperature at which the material crystallizes completely

(C) The temperature at which the material transitions from a rigid, glassy state with low molecular mobility to a more rubbery or viscous liquid state with greater molecular mobility

(D) The temperature at which all chemical reactions within the food cease

97 For microbiological analysis, what specific precautions are highlighted regarding sampling equipment and containers?

(A) Equipment should be cleaned with alcohol and containers can be any type of glass jars-(Correct Alternative)

(B) Samples should be taken using sterile techniques, with sterile gloves, sealed sterilized bags or bottles, and containers should be clean, dry, leak-proof, wide-mouthed, and sterile

(C) Equipment should be wiped clean, and samples stored in any clean, dry container, avoiding overfilling

(D) Using a propane torch to sterilize equipment is recommended on-site for efficiency

98 According to the ISO 9000:2000 definitions, what is the primary distinction between Quality Assurance (QA) and Quality Control (QC)?

(A) QA focuses on product testing, while QC focuses on system documentation-(Correct Alternative)

(B) QA is about post-production inspection, while QC is about pre-production planning

(C) QA is part of quality management focused on providing confidence that quality requirements will be fulfilled, whereas QC is focused on fulfilling quality requirements through operational techniques and activities

(D) QA is a reactive process, while QC is a proactive process

99 What is the primary aim of GMP (Good Manufacturing Practices) programs and HACCP prerequisite programs when implemented in a food plant?

(A) To reduce operational costs and increase profit margins-(Correct Alternative)

(B) To develop new food products for market expansion

(C) To cover the basic controls required for raw materials, ingredients, packaging materials and products, and for the plant's facilities, employees, equipment, operations, and environment that influence the safety of a food

(D) To conduct market research and consumer surveys

100 When the null hypothesis (H0: $\mu 1 = \mu 2 = \ldots = \mu a$) is true in a single factor ANOVA experiment, what is the sole source of variation observed in the data?

(A) Variation between treatments-(Correct Alternative)

(B) The effect of the background variable

(C) The random error component

(D) Significant differences among treatment means